

CLAIMS

What is claimed is:

1. An isolated nucleic acid fragment encoding all or a substantial portion of a sucrose transport protein comprising a member selected from the group consisting of:
  - (a) an isolated nucleic acid fragment encoding all or a substantial portion of the amino acid sequence set forth in a member selected from the group consisting of SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22 and 24;
  - (b) an isolated nucleic acid fragment that is substantially similar to an isolated nucleic acid fragment encoding all or a substantial portion of the amino acid sequence set forth in a member selected from the group consisting of SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22 and 24; and
  - (c) an isolated nucleic acid fragment that is complementary to (a) or (b).
2. The isolated nucleic acid fragment of Claim 1 wherein the nucleotide sequence of the fragment comprises all or a portion of the sequence set forth in a member selected from the group consisting of SEQ ID NO: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21 and 23.
3. A chimeric gene comprising the nucleic acid fragment of Claim 1 operably linked to suitable regulatory sequences.
4. A transformed host cell comprising the chimeric gene of Claim 3.
5. A sucrose transport protein polypeptide comprising all or a substantial portion of the amino acid sequence set forth in a member selected from the group consisting of SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22 and 24.
6. A method of altering the level of expression of a sucrose transport protein in a host cell comprising:
  - (a) transforming a host cell with the chimeric gene of Claim 3; and
  - (b) growing the transformed host cell produced in step (a) under conditions that are suitable for expression of the chimeric genewherein expression of the chimeric gene results in production of altered levels of a sucrose transport protein in the transformed host cell.
7. A method of obtaining a nucleic acid fragment encoding all or a substantial portion of the amino acid sequence encoding a sucrose transport protein comprising:
  - (a) probing a cDNA or genomic library with the nucleic acid fragment of Claim 1;
  - (b) identifying a DNA clone that hybridizes with the nucleic acid fragment of Claim 1;
  - (c) isolating the DNA clone identified in step (b); and
  - (d) sequencing the cDNA or genomic fragment that comprises the clone isolated in step (c)

wherein the sequenced nucleic acid fragment encodes all or a substantial portion of the amino acid sequence encoding a sucrose transport protein.

8. A method of obtaining a nucleic acid fragment encoding a substantial portion of an amino acid sequence encoding a sucrose transport protein comprising:

- 5 (a) synthesizing an oligonucleotide primer corresponding to a portion of the sequence set forth in any of SEQ ID NOs:1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21 and 23; and
- (b) amplifying a cDNA insert present in a cloning vector using the oligonucleotide primer of step (a) and a primer representing sequences
- 10 of the cloning vector

wherein the amplified nucleic acid fragment encodes a substantial portion of an amino acid sequence encoding a sucrose transport protein.

9. The product of the method of Claim 7.

10. The product of the method of Claim 8.

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